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### 1 [What is OpenAccess?](#)



Michaela Guiney

November

2005

**Publisher:** ACM

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OpenAccess is a community effort to enable interoperability among IC design tools through an open source standard data access interface (API) and Reference Implementation of that API. Today, many design flows use common data formats (Verilog, DEF, GDSII, ...


## 2 System-level power optimization: techniques and tools



Luca Benini, Giovanni de Micheli

April ACM Transactions on Design Automation of Electronic Systems  
2000 (TODAES), Volume 5 Issue 2

**Publisher:** ACM

Full text available:  pdf(385.22  
KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

This tutorial surveys design methods for energy-efficient system-level design. We consider electronic systems consisting of a hardware platform and software layers. We consider the three major constituents of hardware that consume energy, namely computation, ...

## 3 Improving graphical information system model use with elision and connecting lines



Jouni Huotari, Kalle Lyytinen, Marketta Niemelä

March ACM Transactions on Computer-Human Interaction (TOCHI), Volume  
2004 11 Issue 1

**Publisher:** ACM

Full text available:  pdf(217.95  
KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Graphical information system (IS) models are used to specify and design IS from several perspectives. Due to the growing size and complexity of modern information systems, critical design information is often distributed via multiple diagrams. This slows ...

**Keywords:** Information visualization, diagrammatic representation, spatial ability, spatial memory, visual search


## 4 Concurrent programming without locks



Keir Fraser, Tim Harris

May ACM Transactions on Computer Systems (TOCS), Volume 25 Issue 2  
2007

**Publisher:** ACM

Full text available:  pdf(1.58  
MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Mutual exclusion locks remain the *de facto* mechanism for concurrency control on shared-memory data structures. However, their apparent simplicity is deceptive: It is hard to design scalable locking strategies because locks can harbor problems ...

**Keywords:** Concurrency, lock-free systems, transactional memory

5 Energy-aware design of embedded memories: A survey of technologies,




architectures, and optimization techniques

Luca Benini, Alberto Macii, Massimo Poncino

February 2003 ACM Transactions on Embedded Computing Systems (TECS), Volume 2 Issue 1

**Publisher:** ACM

Full text available:  [pdf\(288.44 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Embedded systems are often designed under stringent energy consumption budgets, to limit heat generation and battery size. Since memory systems consume a significant amount of energy to store and to forward data, it is then imperative to balance power ...

**Keyw ords:** Embedded systems, embedded memories, integration, memories, nonvolatile, system-on-a-chip, volatile

6 A performance study of data layout techniques for improving data locality in




refinement-based pathfinding

Robert Niewiadomski, José Nelson Amaral, Robert C. Holte

December 2004 Journal of Experimental Algorithmics (JEA), Volume 9

**Publisher:** ACM

Full text available:  [pdf\(1.46 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

The widening gap between processor speed and memory latency increases the importance of crafting data structures and algorithms to exploit temporal and spatial locality. Refinement-based pathfinding algorithms, such as Classic Refinement (CR), find quality ...

**Keyw ords:** Cache-conscious algorithms, classical refinement, pathfinding

7 Chimera: hypermedia for heterogeneous software development enviroments



Kenneth M. Anderson, Richard N. Taylor, E. James Whitehead, Jr.

July 2000 ACM Transactions on Information Systems (TOIS), Volume 18 Issue 3

**Publisher:** ACM

Full text available:  [pdf\(864.32 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Emerging software development environments are characterized by heterogeneity: they are composed of diverse object stores, user interfaces, and tools. This paper presents an approach for providing hypermedia services in this heterogeneous setting. Central ...

**Keyw ords:** heterogeneous hypermedia, hypermedia system architectures, link servers, open hypermedia systems, software development environments


## 8 Simple and semi-dynamic structures for cache-oblivious planar orthogonal range searching



Lars Arge, Norbert Zeh

June SCG '06: Proceedings of the twenty-second annual symposium on  
2006 Computational geometry

**Publisher:** ACM

Full text available:  [pdf\(239.26 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper, we develop improved cache-oblivious data structures for two- and three-sided planar orthogonal range searching. Our main result is an optimal static structure for two-sided range searching that uses linear space and supports queries in ...

**Keyw ords:** cache-obliviousness, data structures, memory hierarchies, range searching

## 9 Cache-oblivious planar orthogonal range searching and counting



Lars Arge, Gerth Stølting Brodal, Rolf Fagerberg, Morten Laustsen

June SCG '05: Proceedings of the twenty-first annual symposium on Computational  
2005 geometry

**Publisher:** ACM

Full text available:  [pdf\(265.73 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

We present the first cache-oblivious data structure for planar orthogonal range counting, and improve on previous results for cache-oblivious planar orthogonal range searching. Our range counting structure uses  $O(N \log^2 N)$  space and answers ...

**Keyw ords:** cache-oblivious, orthogonal range searching, range counting, semi-group range queries

## 10 [Adaptive caching for demand prepaging](#)



Scott F. Kaplan, Lyle A. McGeoch, Megan F. Cole

June I SMM '02: Proceedings of the 3rd international symposium on Memory management  
2002

**Publisher:** ACM

Full text available: [pdf\(279.74 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Demand prepaging was long ago proposed as a method for taking advantage of high disk bandwidths and avoiding long disk latencies by fetching, at each page fault, not only the demanded page but also other pages predicted to be used soon. Studies performed ...

Keyw ords: adaptive caching, block paging, clustering, prepaging

## 11 [Adaptive caching for demand prepaging](#)



Scott F. Kaplan, Lyle A. McGeoch, Megan F. Cole

February ACM SIGPLAN Notices, Volume 38 Issue 2 supplement  
2003

**Publisher:** ACM

Full text available: [pdf\(279.74 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

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Keyw ords: adaptive caching, block paging, clustering, prepaging

## 12 [Memory hierarchy reconfiguration for energy and performance in general-purpose processor architectures](#)



Rajeev Balasubramonian, David Albonesi, Alper Buyuktosunoglu, Sandhya Dwarkadas

December MICRO 33: Proceedings of the 33rd annual ACM/IEEE international symposium on Microarchitecture  
2000

**Publisher:** ACM

Full text available: [pdf\(155.56 KB\)](#) [ps\(663.39 KB\)](#) [Publisher Site](#)

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[references](#),  
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### 13 APEX: access pattern based memory architecture exploration



Peter Grun, Nikil Dutt, Alex Nicolau

September 2001 ISSS '01: Proceedings of the 14th international symposium on Systems synthesis

**Publisher:** ACM

Full text available:  [pdf\(377.05 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Memory accesses represent a major bottleneck in embedded systems power and performance. Traditionally, designers tried to alleviate this problem by relying on a simple cache hierarchy, or a limited use of special purpose memory modules such as stream ...



### 14 Streaming computation of Delaunay triangulations



Martin Isenburg, Yuanxin Liu, Jonathan Shewchuk, Jack Snoeyink

July 2006 ACM Transactions on Graphics (TOG), Volume 25 Issue 3

**Publisher:** ACM

Full text available:  [pdf\(387.93 KB\)](#)  [mov\(20:20 MIN\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

We show how to greatly accelerate algorithms that compute Delaunay triangulations of huge, well-distributed point sets in 2D and 3D by exploiting the natural spatial coherence in a stream of points. We achieve large performance gains by introducing *spatial* ...

*Keywords:* Delaunay triangulation, TIN terrain model, geometry processing, spatial finalization, stream processing



### 15 Streaming computation of Delaunay triangulations



Martin Isenburg, Yuanxin Liu, Jonathan Shewchuk, Jack Snoeyink

July 2006 SIGGRAPH '06: ACM SIGGRAPH 2006 Papers

**Publisher:** ACM

Full text available:  [pdf\(387.93 KB\)](#)  [mov\(20:20 MIN\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

We show how to greatly accelerate algorithms that compute Delaunay triangulations of huge, well-distributed point sets in 2D and 3D by exploiting the natural spatial coherence in a stream of points. We achieve large performance gains by introducing *spatial* ...

*Keywords:* Delaunay triangulation, TIN terrain model, geometry processing, spatial finalization, stream processing


## 16 Software controlled memory layout reorganization for irregular array access



### patterns

Doosan Cho, Ilya Issenin, Nikil Dutt, Jonghee W. Yoon, Yunheung Paek  
September 2007  
CASES '07: Proceedings of the 2007 international conference on  
Compilers, architecture, and synthesis for embedded systems

**Publisher:** ACM

Full text available:  [pdf\(520.83 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Many embedded array-intensive applications have irregular access patterns that are not amenable to static analysis for extraction of access patterns, and thus prevent efficient use of a Scratch Pad Memory (SPM) hierarchy for performance and power improvement. ...

**Keyw ords:** data layout, energy consumption, scratch pad memory

## 17 QPipe: a simultaneously pipelined relational query engine



Stavros Harizopoulos, Vladislav Shkapenyuk, Anastassia Ailamaki  
June 2005  
SIGMOD '05: Proceedings of the 2005 ACM SIGMOD international conference  
on Management of data

**Publisher:** ACM

Full text available:  [pdf\(506.36 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#)

Relational DBMS typically execute concurrent queries independently by invoking a set of operator instances for each query. To exploit common data retrievals and computation in concurrent queries, researchers have proposed a wealth of techniques, ranging ...


## 18 Implementation and performance of integrated application-controlled file caching,



### prefetching, and disk scheduling

Pei Cao, Edward W. Felten, Anna R. Karlin, Kai Li  
November 1996  
ACM Transactions on Computer Systems (TOCS), Volume 14 Issue 4

**Publisher:** ACM

Full text available:  [pdf\(609.00 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

As the performance gap between disks and micropocessors continues to increase, effective utilization of the file cache becomes increasingly important. Application-controlled file caching and prefetching can apply application-specific knowledge to improve ...

**Keyw ords:** application-controlled resource management, disk scheduling, file caching, file prefetching

## 19 What do people recall about their documents?: implications for desktop search




tools

Tristan Blanc-Brude, Dominique L. Scapin

January 2007      I UI '07: Proceedings of the 12th international conference on Intelligent user interfaces

**Publisher:** ACM

Full text available:  [pdf\(333.19 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This study aims at finding out which attributes people actually recall about their own documents (electronic and paper), and what are the characteristics of their recall, in order to provide recommendations on how to improve tools allowing users to retrieve ...

Keyw ords: desktop search tools, human memory, personal information retrieval, user studies


## 20 Slicing real-time programs for enhanced schedulability



Richard Gerber, Seongsoo Hong

May 1997      ACM Transactions on Programming Languages and Systems (TOPLAS), Volume 19 Issue 3

**Publisher:** ACM

Full text available:  [pdf\(378.88 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

In this article we present a compiler-based technique to help develop correct real-time systems. The domain we consider is that of multiprogrammed real-time applications, in which periodic tasks control physical systems via interacting with external ...

Keyw ords: priority assignment, program slicing, static priority scheduling, system tuning

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